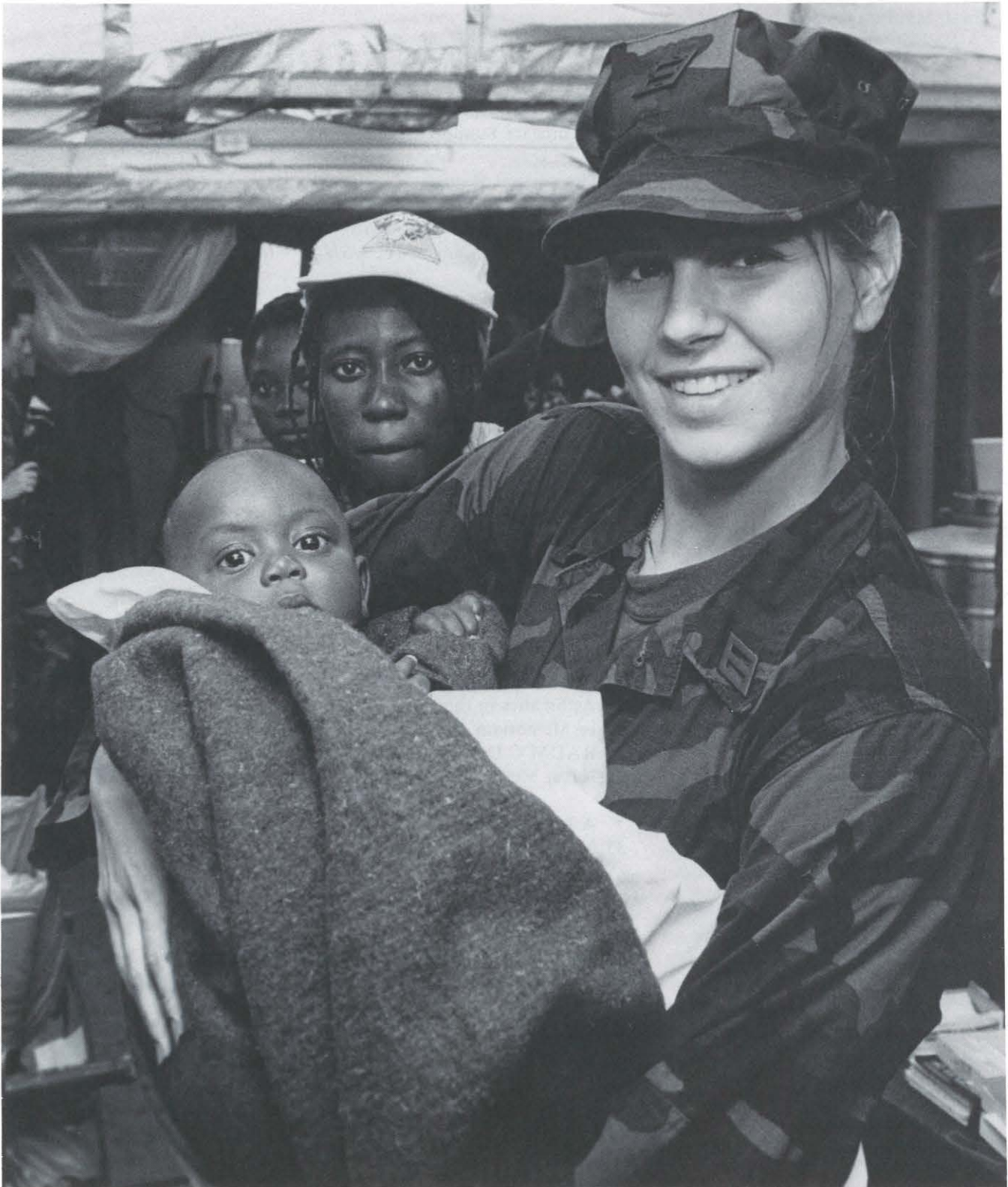


NAVY MEDICINE

March-April 1992



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Jan Kenneth Herman

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Nancy R. Keesee

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COVER: AN Charlene M. Dugat carries a baby from the examining room following its treatment by a Navy physician. Stationed at Mayport, FL, AN Dugat was sent to Guantanamo Bay, Cuba, where her French language skills helped in the effort to aid the Haitian migrants. Story on page 2. Photo by PH1(SW) Michael D.P. Flynn.

Healthcare Support Offices: A Vital Navy Resource

I want to share a few thoughts with you on the important role our Healthcare Support Offices (HSOs) play in Navy medicine. Our organization has been in a constant state of change—for the better, we believe—since 4 Aug 1989, when the Naval Medical Command was disestablished and the Bureau of Medicine and Surgery was reinstated and revitalized. This move once more combined policy decision-making and implementation under one command.

As reorganization of the Navy Medical Department continued, the Geographic Commands, established only a few years earlier, downsized and streamlined into HSOs in October 1989. At the same time, military command and control of medical and dental treatment facilities transferred to the responsible line commanders (RLCs). The purpose of HSOs is to provide primary and technical support to those facilities and to consult with and provide assistance to the RLCs as they exercise command and control over their health care activities.

As field extensions of BUMED, HSOs are uniquely positioned to provide rapid and localized guidance and assistance in implementing BUMED policy decisions. Likewise, they provide a centralized, regional feedback to BUMED that is invaluable to our staff here in assessing and balancing needs across Navy medicine.

Now, as the Navy looks at reorganization and

rapid change, our own efforts are receiving closer scrutiny. Our reorganization has been uncommonly smooth, especially at its continually accelerating pace. The HSOs, which were brought on-line a year earlier than planned, were valuable assets during the reorganization, allowing us to ensure that our beneficiaries saw no decline in care or access while the structure that provided care changed dramatically. The HSOs are a vital link between BUMED and the catchment area leadership team as we implement Defense Health Affairs policy. They improve communication and coordination with the line Navy, our sister services, other federal agencies, and the civilian health care community. Our HSOs enhance our beneficiaries' access to the highest quality care at reasonable cost.

But HSOs can only assist you if you call on them. You must look to the expertise available at your HSO as we continue to undergo change, scrutiny, and dwindling resources. I want HSOs to be the catalytic agent for claimancy-wide implementation of the Coordinated Care Program, and other options which may be recommended by our leaders.

Our HSOs are a vital Navy resource. Use them as the facilitators they are designed to be in continually improving communication, coordination, and access to the finest quality care.

CHARLIE GOLF ONE.

VADM Donald F. Hagen, MC



DOD photo

LCPL Todd Tripp, 9th Marine Engineers, Bravo Co. and a young Haitian.

Preventive Medicine at the Haitian Refugee Camps

CDR Donald S. Herip, MC, USN
LCDR Douglas D. Slaten, MC, USN

In November 1991, as Haitian migrants fled Haiti for the United States in increasing numbers, U.S. Coast Guard ships began interdicting boats filled with Haitians and taking them to the U.S. Naval Base at Guantanamo Bay (Gitmo), Cuba. There, migrant camps were established to provide shelter, food, and medical care for the Haitians. The main camp was constructed on a MaCalla airfield tarmac. A "tent city" capable of housing up to 10,000 people quickly sprang up in a matter of days. A preventive medicine team composed of TAD members from various east coast commands rapidly mobilized to augment Gitmo's indigenous preventive medicine department. Team members included epidemiologists, environmental health officers, entomologists, and preventive medicine technicians. In December, a separate Joint Task Force (JTF) hospital manned by TAD personnel was established in an old vacant restaurant adjacent to the airfield.

The preventive medicine team was involved in the design phase of the camps as well as the daily monitoring of camp sanitation. During this design phase, personnel considered basic sanitation issues, location, and adequacy

of potable water, sewage disposal, and the operation of food preparation facilities. They also addressed the potential for disease transmission associated with overcrowding.

Nearby potable water was brought into the camps via overground PVC plastic pipe. These lines were protected with outer steel pipe sleeves and dirt mounds to accommodate vehicle traffic. Biweekly water sampling for coliform organisms provided continuing assurance of safe potable water.

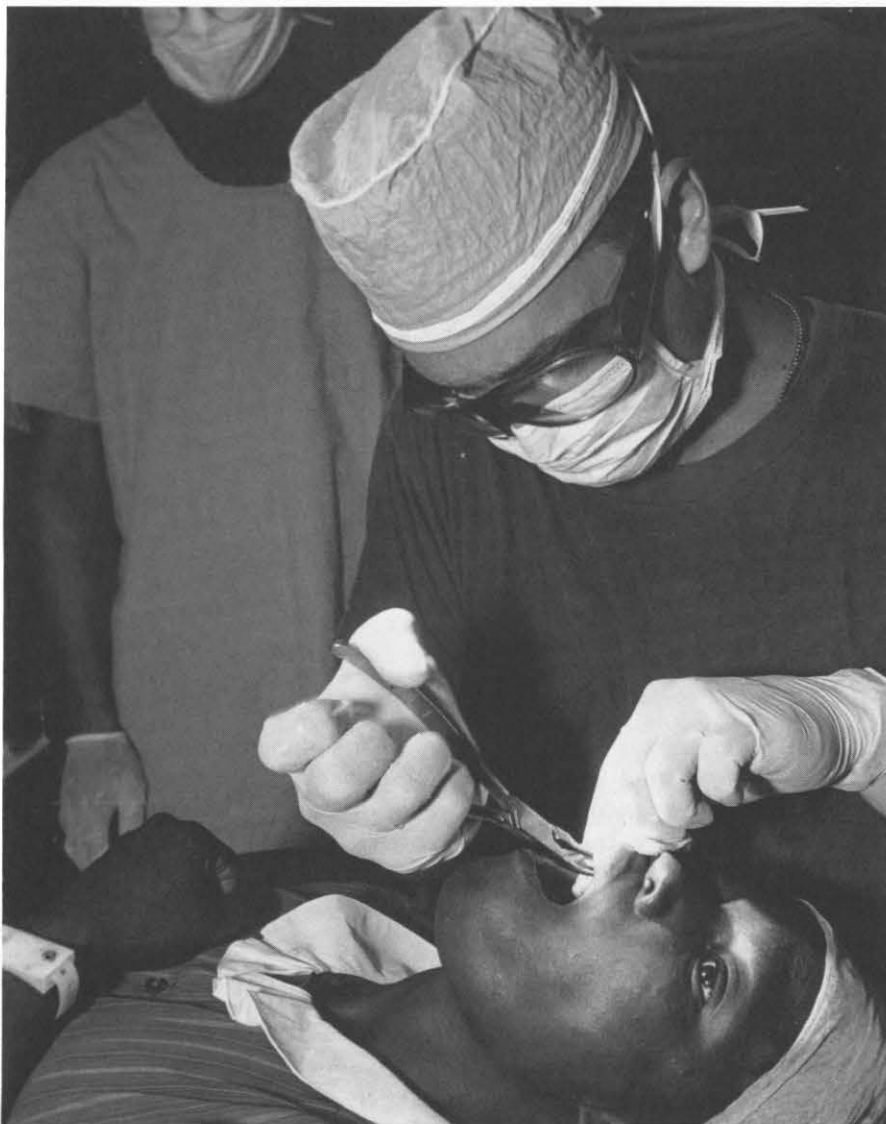
The resulting waste water drainage from spigots proved to be a problem as some of the drainage trenches built to receive the waste water were not adequate, resulting in standing water in high use areas. This was an important concern since stagnant water could provide a breeding area for mosquitoes. Because some of the Haitians had laboratory-proven vector-borne disease such as malaria, this became a serious concern. The expansion of these drainage trenches was not readily accomplished since the tarmac was located on a coral base not easy to excavate.

The showers also had a significant drainage problem. The main drain was located along the center of the sloping plywood floor. However, runoff along

the edges of the showers was not contained and leaked out to form a large area of standing water. The Seabees corrected this problem by using a new prefabricated floor and bulkhead which adequately contained the shower drainage. Their "can do" tradition was a welcome relief during such a dynamic situation.

Portable toilets, available in a ratio of one toilet for 40 men and one toilet per 30 women, proved adequate. These toilets were pumped at least once daily and more often in high use areas. They were located near the fence line to expedite pumping. After pumping, the units were disinfected with a 30 percent formaldehyde solution. Medical personnel detected no formaldehyde hypersensitivity. In fact, the toilets seemed to receive maximum use after the pumping and disinfection operation. A combined unit which incorporates several stalls into one collection reservoir would have greatly decreased the time and labor required for pumping individual units. This waste was ultimately disposed of in a landfill several miles from any inhabited area.

Food preparation took place in field kitchens adjacent to the camp. The food was prepared immediately before



LT Jeffrey D. Day, DC, of the 2nd Dental Battalion based at Camp Lejeune, NC, extracts the tooth of a Haitian migrant at Guantanamo Bay.

serving and no leftovers were retained. These practices greatly reduced the potential for food-borne illness. Haitian refugees helped prepare and serve food. The migrants were encouraged to help care for themselves, and were constantly supervised while working in the food preparation area.

The food warehouse area was also located on the tarmac. Since the turnover of food was rapid, there were no problems with stored products pests. Food pallets were stored outside exposed to the weather and were susceptible to rain. When more than a

quarter inch of rain surprised us in December, supposedly after the rainy season had ended, supplies that were packaged in plastic containers saved the day. There was no spoilage.

The potential for vector-borne disease was a primary concern of Gitmo's Department of Defense (DOD) residents and there were various efforts to educate the public regarding the actual disease risk from the Haitians. Personnel continually monitored the local vector population using landing bite counts, larval dipping, and light trap surveillance. Although disease vectors

were present, their numbers were so low that the risk of disease transmission was extremely small.

Malaria transmission was the main concern since the disease (*Plasmodium falciparum*) is endemic in Haiti. Fortunately, because the malaria from Haiti is chloroquine sensitive, standard malaria medicines of proven efficacy and minimal side effects could be utilized to treat these cases. As of January 1992, approximately 50 slide-proven cases of malaria were seen in 6,400 Haitian migrants. No malaria was reported among Gitmo's DOD residents. As an added precaution, helicopter spray operations proved quite effective in reducing the mosquito population.

Besides reducing the vector population, efforts were also directed at reducing the malaria parasite reservoir (Haitians with malaria). Initially, the migrants were given primaquine to inactivate any malaria gametocytes (the parasite stage that infects the mosquito) that may be present in their blood. However, future malaria gametocytes could be generated since primaquine is not active against the blood schizont stage of the parasite. Chloroquine treatment was then instituted for incoming migrants in hope of eliminating any potential reservoir. Compliance with this regimen was evaluated as inadequate and was discontinued. It was recommended that active case surveillance be continued along with providing migrants ready access to medical care to detect malaria cases. The combined efforts of reservoir detection and aggressive treatment of suspected cases along with vector reduction should prevent any introduction of malaria to Gitmo.

The preparation and interpretation of blood smears for malaria diagnosis is not a common test for most laboratory technicians trained in the United States. Initially, there were some problems with the preparation of the blood smears. Most medical personnel prefer to study the thin blood smear since they recognize familiar landmarks such as red blood cells. However, the thick blood smear, which is much



CDR Ken Conrad, MC, checks the heart sounds of a 30-year-old Haitian migrant.

Navy personnel also responded to the migrants' dental complaints.



more sensitive in detecting malaria parasites, is often neglected, since it requires more experience to interpret. An incidental finding on one of the malaria slides revealed another vector-borne parasite, *Wuchereria bancrofti* which causes filariasis. Since this parasite is relatively large, i.e., 230 microns long, it is readily seen under low-power magnification. Only two of the Haitians had microscopic evidence of filariasis. Those patients suspected of having malaria but with negative laboratory tests were treated presumptively with chloroquine.

There was also morbidity monitoring of the Haitians. By overseeing various medical diagnoses, one can detect a breakdown in sanitation. For instance, if there was an increase in diarrhea and vomiting, a food or water-borne illness would be suspected. This would initiate increased efforts toward detecting a breakdown in food preparation techniques or possible contamination of the water supply. An increase in respiratory complaints would arouse suspicion of disease spread via that route and amplified with overcrowding. Initially, baseline data was collected to

obtain a prevalence rate for certain medical conditions among the migrants. No significant clusters of infectious disease were detected.

The immunological status of the refugees was unknown. Medical personnel repeatedly attempted to obtain immunization histories but most of the migrants could not recall what immunizations they received in the past. It was assumed that these migrants are representative of most people from underdeveloped countries in the tropics.

Medical personnel drafted an immunization program to provide them with protection from vaccine preventable diseases. Those immunizations which could have the largest impact on population morbidity and mortality were given top priority. For example, it was thought that the population was vulnerable to the current influenza strain. If the population reached the maximum census of 10,000 and an influenza epidemic resulted infecting one-third the population (3,300), and only 2 percent of those infected required inpatient care, then 66 hospital beds would be required for this one disease. Such a

scenario could easily overwhelm the health care resources available at Gitmo. Furthermore, many opportunities existed for introduction of visitors from CONUS where the influenza epidemic was occurring and returning military personnel had frequent contact with the migrants.

Other immunizations were administered to update the immunological status of the Haitians. These were implemented in step-wise manner. First, children were given the standard childhood immunizations. All newborns received hepatitis B prophylaxis, since the carrier rate for this disease is significantly higher in mothers from underdeveloped countries. Hepatitis serological test results are not readily obtained at Gitmo since the specimens must be mailed out. All adults who presented with a skin wound received tetanus prophylaxis, and a tetanus immunization program was recommended for all migrants.

Health care workers were the group of DOD personnel at greatest risk for acquiring disease from the migrants. Standard infection control techniques were emphasized, such as frequent handwashing and the use of universal



precautions when handling body fluids. There were isolation areas for those migrants with suspected tuberculosis. Those migrants with a suspected vector-borne disease such as malaria, were protected from further contact with mosquitoes until they were appropriately treated.

During the first few weeks of caring for the Haitians, the situation was extremely dynamic with plans changing on a daily basis. Not knowing how many migrants would be arriving and how long they would stay made the planning of public health intervention strategies difficult. Thus, we had to remain flexible and improvise to accomplish our goals of preventing migrant morbidity.

In retrospect, a city capable of housing 10,000 people was created within

days where nothing existed previously, except for an airfield and an old restaurant. The basic needs of the Haitians were provided for, as well as security, fire protection, and medical care. As one could imagine, the coordinated efforts of many organizations were required to accomplish such a phenomenal task. Continual monitoring of the broad spectrum of preventive medicine concerns was necessary to limit the migrant need for curative medical treatment during their stay at Gitmo. □

Dr. Herip is Head of the Epidemiology Department at the Navy Environmental and Preventive Medicine Unit No. 2 (NEPMU-2), Norfolk, VA 23511-6288. Dr. Slaten is a staff epidemiologist at the same activity.

HM2 Cicilia R. Fitzgerald was off duty when she responded to help treat this injured Haitian.

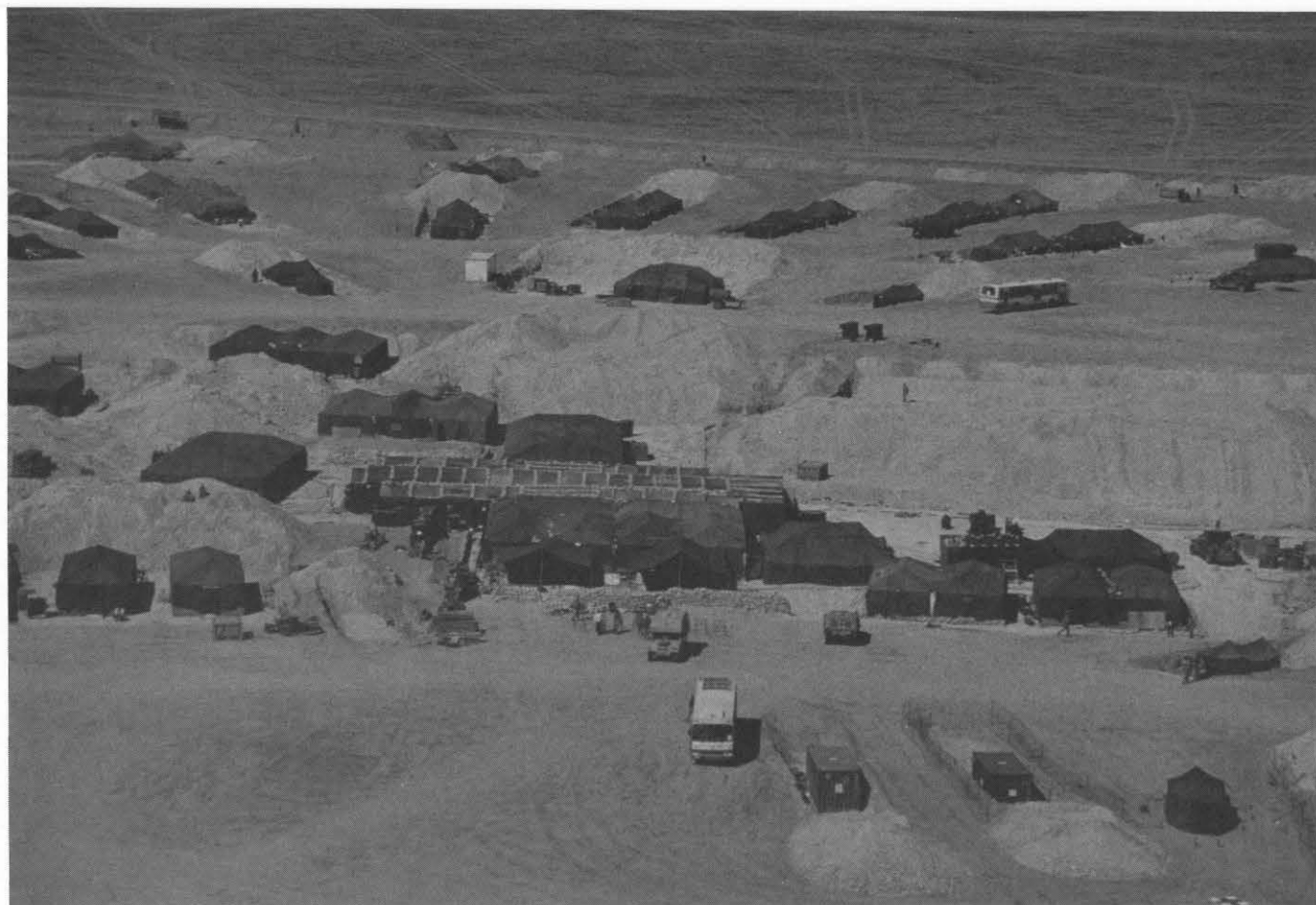


Photo courtesy CAPT Frederick M. Burkle, Jr., MC, USNR

Al Khanjar

Features

The Untold Story in the Gulf:

Navy Medicine and the Marines

CAPT Michael D. Roberts, MSC, USNR

One of the "untold stories" of the Gulf War is the part played by Navy medical personnel who supported the U.S. Marine Corps during the 5-month "sitzkrieg," and 100-hour ground war. The activities of the more glamorous hospital ships

USNS *Mercy* and USNS *Comfort*, and Fleet Hospitals 5, 6, and 15 have been well documented by the Center for Naval Analysis (CNA) in an after-action report submitted to the CNO on 15 May 1991. The "human interest" stories of their personnel have also fea-



tured prominently in the public media during and after the war. Nevertheless, those Navy medical personnel that supported the Marine Corps received little publicity and scant official recognition, despite the fact that they treated the majority of all combat-

related injuries during the war for both U.S. and Iraqi wounded.

Initial Deployment

At the beginning of Operation Desert Shield, I MEF was rushed into the theater on 20 Aug 1990, and off-

loaded at Al Jubayl, Saudi Arabia. The I MEF included the 1st Medical Battalion, 1st FSSG, from Camp Pendleton, CA (the 2nd Medical Battalion is based at Camp Lejeune, SC; the 3rd Medical Battalion is based at Okinawa). The first elements of the 1st



One of three complete surgical suites at Fleet Hospital 5 (right) awaits the expected casualties in the early phases of Operation Desert Shield.

Medical Battalion to arrive consisted of Echo and Foxtrot Surgical Support Companies, and Alpha, Bravo, and Hotel (I) Collecting and Clearing Companies. Echo Company immediately moved into the Al Huwaylat medical facility at Jubayl, a Saudi hospital that had been vacant for over 4 years (see map). U.S. personnel put the hospital, with 150 beds and 5 operating rooms, back into operation after 2 weeks of cleaning and scrubbing.(2)

Meanwhile, Foxtrot Surgical Support Company went to Manifeh Bay,

approximately 50 miles north of Jubayl and 80 south of the Kuwait border. There, personnel erected a 150-bed facility in tents, with 5 operating rooms in Marine Corps Environmental Shelter System (MCESS) units. It would provide support to any potential Marine amphibious landing operations taking place in the north. (3)

Alpha, Bravo, and Hotel Collecting and Clearing Companies were held in reserve in Camp 9 until needed. Portions of their equipment were used to bring other units in the 1st and 2nd Medical Battalions up to full Table of Equipment (TE).

Problems began to surface very quickly. Supplies for the I MEF came from three Maritime Pre-position Ships (MPS), which contained enough equipment for three brigades. Therefore, when the 2nd MARDIV arrived, the medical forces would be approximately 50 percent under their authorized TE. In addition, much of the USMC MPS equipment went to make up Army shortages in their TEs.(4)

Furthermore, during the early stages of the conflict the Saudis were very sensitive about the numbers of non-Arab soldiers in country. They

placed an arbitrary restriction of 5,000 personnel on the I MEF.(5) MARCENT decided to field all the medical companies without their rear element support staff (H&S Companies). As a result, the 1st Medical Battalion wound up about one and a half companies short of its normal complement. Reservists created an additional problem. They arrived in the Gulf without any equipment and, in many instances, without even the proper (desert sand) camouflage utilities.(6) It was mid-February 1991 before the 1st and 2nd Medical Battalions were fully up to their authorized TE.

The 2nd Medical Battalion, 2nd FSSG, at Camp Lejeune, NC, had previously sent out one surgical support

Photo by the author



AMAL boxes at Kabrit, Saudi Arabia



BUMED Archives

company and several clearing stations with the amphibians to the Gulf in August 1990. Battalion staff were notified to prepare for further deployment on 10 Nov 1990. By 5 Dec, the surgical support companies Golf and Foxtrot, collecting and clearing companies Alpha, Charlie, and Delta were ready for deployment to the Gulf.(7) MPUAS (Medical Personnel Unit Augmentation System)(8) personnel from 16 medical facilities were also sent with the 2nd Battalion.(9) On 17 Dec 1990, the advance party for the 2nd Medical Battalion arrived at the Royal Saudi Air Force Base in Dammam, Saudi Arabia. By late December, the remainder of the battalion had arrived.(10)

Setting Up Shop

During the last week of December, Echo and Foxtrot Surgical Support Companies from 1st Medical Battalion were sent to the Royal Saudi Naval Base compound at Ras al Mishab. Due to the arrival of the 2nd Medical Battalion in the same theater of operations, both companies were renamed. Echo was now called "Lima" and Foxtrot became "Kilo."

Shortly after arrival from Camp Lejeune on 1 Jan 1991, Charlie Company occupied a position near the coast, north of Jubayl, adjacent to Manifeh Bay, called "Cement Ridge." On 4 Jan, the COs of collecting and clearing companies Alpha and Delta, and surgical support companies Golf

and Foxtrot, 2nd Medical Battalion, were sent to Kabrit, Saudi Arabia, to lay out a site for the setup of a field medical facility comprising 21 tents and 20 MCESS units, containing 7 ORs and 210 beds. Hotel Collecting and Clearing Company, 1st Medical Battalion, soon joined the 2nd Medical Battalion at Kabrit. The Kabrit facility, approximately 50 km west off the coast, 100 km north of Jubayl, and 10-11 km south of the Kuwait border, was partially operational by 20 Jan, and fully operational by 3 Feb.

An advance party from the Kabrit facility arrived at Al Khanjar (the "Dagger") on 8 Feb, to stake out the layout for a new facility, located on the



BUMED Archives

Litter bearers carry a simulated casualty to a waiting C-130. During the ground war heavy rains made forward dirt runways unusable. Saudi buses often were the best transportation available.

"Gravel Plains," approximately 145 miles from the coast and 9 miles from the western Kuwait border by the "Elbow."⁽¹¹⁾ Al Khanjar was to become the forward logistics base for the Commanding General of the 2nd FSSG, BGEN C.C. Krulak. It encompassed 11,280 acres, had two packed dirt C-130 runways ("Al Khanjar International"), and one helo runway ("Lonesome Dove"). By 17 Feb, surgical support units Golf and Foxtrot, and collecting and clearing companies Hotel and Delta were joined by Lima Surgical Support Company and a surgical team from Kilo from Ras al Mishab. The "Al Khanjar Trauma Center" in its final form had 290 total beds, 33 ICU beds, and 14 ORs, in a unique combined 1st and 2nd Medical Battalion facility.⁽¹²⁾

The War

Much to everyone's surprise, few casualties were received on 24 Feb, the official start of the ground war. Alpha Clearing Station, situated earlier by the breach point at site "Ponderosa," and Charlie Company at site "Virginia City," accompanied the Marine units pouring through the Iraqi barrier in the third wave. Alpha set up a facility next to the DSG-2 Forward in the area

cleared by Task Force Grizzly, near the airbase of Al Jaber, Kuwait. By 2 March, Charlie Company, after a series of moves, reached the outskirts of Kuwait City. However, it remained in the area for only a few days before receiving the order to pull back to Virginia City. Within the next few weeks all companies pulled back to Ras al Mishab or Jubayl.⁽¹³⁾

Within 24 hours of the cease-fire order at 0800 on 28 Feb, orders began arriving for the phase-down of the Al Khanjar facility and retrograde movement of units back to the Jubayl area for immediate pullout and return to CONUS. By 28 March, closure of the Al Khanjar facility was completed and only Kilo Surgical Support Company and Alpha Company remained at Ras al Mishab with a reduced capability. Foxtrot, having closed down the Kabrit facility on 10 March returned to the Jubayl area, once again activating the Al Huwaylat facility.⁽¹⁴⁾ By 16 May, all units of 1st and 2nd Medical Battalion had returned to CONUS.⁽¹⁵⁾

Author's Observations

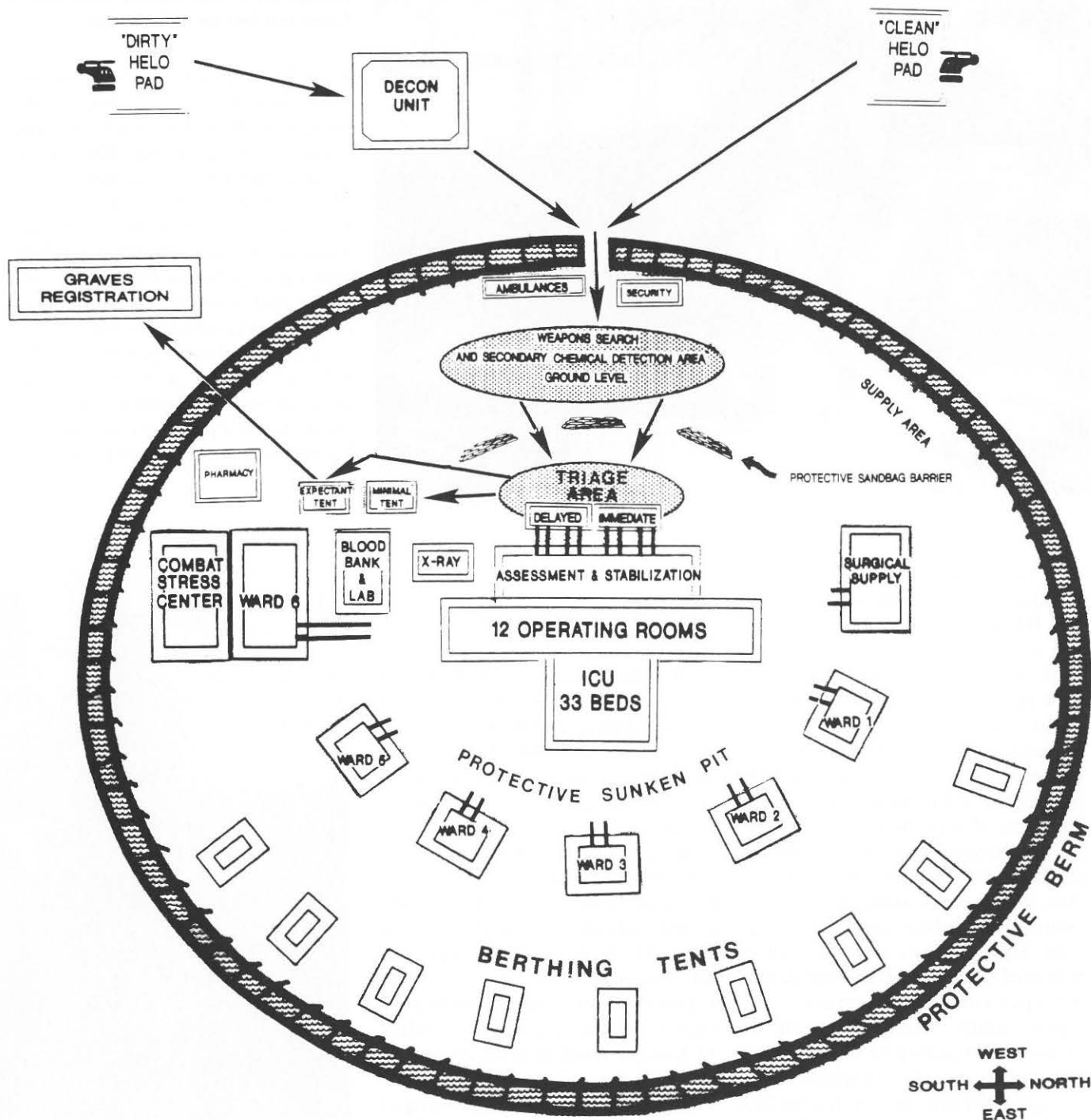
During his Gulf deployment, the author noted several general problem areas:

- Some medical personnel—physicians and hospital corpsmen—were inexperienced in field medical conditions. Most of the doctors, augmented personnel from major CONUS medical facilities, had little or no field training. The majority had not attended the C4 course. Some of the augmented hospital corpsmen were not 8404s, and had not attended Field Medical Service School. Medical Service Corps and Nurse Corps officers tended to have more USMC experience and field training, but were generally quite junior for the positions they were assigned.⁽¹⁶⁾
- Many personnel were assigned to the Gulf in a condition "not fit for duty." Better physical screening is needed before forwarding personnel to a combat zone.⁽¹⁷⁾
- Much of the equipment from the MPS vessels was of Vietnam era vintage. During the first 5 months of Desert Shield over \$9.5 million was spent to bring the authorized TEs up to par.⁽¹⁸⁾
- There is a considerable difference between the "Blue Cans" and "Green Cans" or AMALs (Authorized Medical Allowance List) used by the Navy and the Marines. There are many items in both that are not needed, and many more that should be updated to present-day standards.⁽¹⁹⁾

The Al Khanjar Trauma Center experienced several problems during the ground war phase:

- Insufficient water for adequate sanitation/hygiene of all personnel. Showers were restricted to those dealing with blood products or touching patients.
- Dirt runways certified by the Air Force for C-130s degraded under the constant rains during the ground war phase. Many scheduled medevacs

Casualty Flow at Al Khanjar Navy-Marine Trauma Center



were canceled, resulting in long delays in evacuating patients.(20) Inclusion of the medevac role should be a priority for new Marine Corps V-22 "Osprey" tilt-wing rotor aircraft once they become operational.

- In situations where air evacuation is not possible, more and better dedi-

cated ground transport may be necessary.

- No computer system was utilized for the Medical Regulating function with linkage to any kind of a central database at the sub-Joint Medical Regulating Organization (JMRO) level.(21)
- No computer system was utilized for

supply reordering with the MED-SOM. Minimal linkage was attained at some levels utilizing floppy disks, but this was not practical for units near the front like Al Khanjar, Ras al Mishab, or Kabrit.(22)

- Better chemical detection gear is needed. M8-A1 chemical detectors



Photo by the author

LT B.R. Barendse, NC, shows how welded steel litter frames transform a Saudi bus into an ambulance.

- MCESS operating rooms proved their value during all phases of the operation. Inclement weather—rain, wind, blowing sand, and cold, was the norm during much of the period. The MCESS units were invaluable.(27)
- The presence of a Stress Trauma Team is a necessity for any potentially prolonged operation. Due to the short nature of this conflict, its use was minimal, but its value was obvious to those personnel involved in patient care.(28)
- Blood supplies were at all times quite adequate. Storage of blood products was a problem in some areas, but this was not universal.(29)

and Fox vehicle chemical detectors failed in the presence of oil well smoke, and HE gases from mines and incoming artillery rounds. CAM detectors used in the A&S area at Khanjar gave false positives in the presence of anesthesia gases.(23)

- Better communication equipment is needed, and more frequencies should be assigned. This is particularly crucial when the Medical Regulators are trying to communicate with incoming aircraft, JMRO, and other medical units. Any computer system designed to coordinate medical regulating functions between units and the JMRO will need a separate HF assignment.
- Paperwork requirements and reports under "minimize" should be reduced to the absolute minimum for units under combat conditions. Although "minimize" was in effect at Ras al Mishab during the Battle for Khafji, and at Al Khanjar during the ground war phase, requests for detailed reports continued to arrive at the already overburdened Medical Regulating office during a time when priorities were being given to arranging medevacs for wounded personnel.(24)

Notwithstanding the aforementioned "problems," many positive

aspects were in evidence during the operation:

- The setting up of 1st and 2nd Medical Battalion facilities at Al Huwaylat Hospital, Manifeh Bay, Ras al Mishab, Kabrit, and Al Khanjar were imminently successful. The cooperation between the two medical battalions was outstanding and contributed greatly to the success of the provision of patient care in both combat and noncombat settings.
- Use of dental personnel as supplemental staff for triage and anesthesia during the receiving of casualties was very successful.(25)
- The unplanned, but valuable presence of a plastic surgeon on the staff at Al Khanjar resulted in the immediate reconstruction of many major facial wounds. Treatment of this category of wound during the first 2-12 hours is crucial to healing. Medevac difficulties caused many delays that would have significantly affected the results of these injuries had a plastic surgeon not been available.(26)

An Allied casualty is loaded aboard a Saudi bus for transport to the rear during the ground war.



Future Role of Nurses

It would be appropriate at this time to reexamine the role of the female nurse in the Marine Corps setting. Shortages of male nursing personnel mitigate against the exclusion of female nurses, doctors, and technicians in forward medical units. The policy is hypocritical, at best, since female Marine Corps personnel are currently found in all the forward areas in logistics, transportation, security, etc. A partial solution might be the inclusion of female personnel in the surgical support companies, ostensibly located "behind the lines." It should be recalled, that the combination of increased fluidity in the modern concept of battle and longer ranged weapons (i.e., ballistic missiles), yield a

much deeper "front lines" area. In fact, more women were killed through hostile action in areas which once would have been considered "behind the lines" in previous wars.

References

1. Hotel Company was a renamed Alpha Company from 3rd Medical Battalion that was attached to the 1st Medical Battalion.
2. Taped interview, CAPT W.R. McClintock (WRM), SC, USNR, with LT B.R. Barendse, NC, USN, CO, Echo Surgical Support Company, 1st Medical Battalion, 1st FSSG, Al Huwaylat Hospital, Jubayl, S.A., 19 Oct 1990.
3. Taped interview, Michael D. Roberts (MDR) with CDR G.C. Breeden, MSC, USN, CO, 1st Medical Battalion, 1st FSSG, Al Huwaylat Hospital, Jubayl, S.A., 24 Jan 1991.
4. Ibid.
5. Taped interview, WRM with CDR H.R. Sullivan, MSC, USN, COMUSNAVLOG-

SUPFOR-N9, Manama, Bahrain, 25 Oct 1990.

6. Taped interview, MDR with CDR W.G. Brown, MSC, USN, CO, 2nd Medical Battalion, 2nd FSSG, Al Khanjar, S.A., 25 Feb 1991.

7. Ibid.

8. Medical Personnel Unit Augmentation System, later changed to "MPAS" when it was realized that augmentees were not coming from any single unit, but from units all over the country.

9. Ibid.

10. Ibid.

11. The relocation to this area was called a "stealth" move, with no news releases. When the 1st Medical Battalion was at Ras al Mishab, mention of the facility's location on CNN news resulted in shelling of the area by the Iraqis during the battle for Khafji.

12. Ibid.

13. Taped interview, MDR with LT Barendse, 26 April 1991.

14. Ibid.

15. Ibid.

16. Taped interview, MDR with CDR Breeden, Jubayl, S.A., 24 Jan 1991.

17. Taped interview, MDR with CDR Brown, Al Khanjar, S.A., 25 Feb 1991.

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Photo by the author



CAPT Roberts is a reservist drilling with the Naval Historical Center Unit NR VTU 0615, Washington, DC. He deployed to the Gulf in January 1991.



Pacific Duty on the Troopship MS *Sommelsdijk*

CAPT Paul M. Ellwood, MC, USNR (Ret.)
Edited by Dean L. Mawdsley, M.D.

In the January-February issue, Navy Medicine ran part I of an article based on essays written by Dr. Paul M. Ellwood while he served as medical officer aboard the troopship MS *Sommelsdijk*. Even as the former Dutch freighter ferried troops to the Pacific theater, Ellwood and the ship's crew occasionally went ashore to replenish supplies, visit with their colleagues serving with the Marines, and to explore the war-scarred landscape. Before the island of Saipan had been completely subdued, Ellwood scrambled about on foot and by jeep. Later, back aboard *Sommelsdijk*, he wrote about the day's adventures. As he and the crew prepared for Christmas 1944 anchored in Philippine waters, none could have suspected that a Japanese torpedo bomber would soon mar their holiday.

Aboard *Sommelsdijk*, Samar, P.I., 12-26-44

Our ship arrived at Guinan (Geevan), Samar, P.I. about 1230, 24 Dec 1944. Information was soon obtained by our CO, LCDR Joseph E. Day, from shore authorities that our 1,300 CB passengers would be disembarked as soon as possible but that it would not be on the day of arrival. On 25 Dec plans for disembarkation were completed and the first troops were to go off at 0700 on 26 Dec.

Everything went as usual on 25 Dec except there were no air alerts, whereas on the days preceding there were three.

On the evening of 25 Dec I entered the wardroom about 1945, my duties in sick bay having been completed about 1920. I intended to continue reading, *God Is My Co-Pilot*, a Christmas present from my wife. I had just sat down and found my place when the air alert sounded. I jumped up and started for the door when suddenly a violent explosion occurred. The ship

shook as if jarred by a tremendous earthquake accompanied by gruesome, portentous noises. Everybody realized we had been hit; I thought by an aerial bomb. I ran a few feet to my cabin, picked up my lifejacket, and started to my battle station forward. I soon observed fire and smoke coming from hold #1 which was sick bay and my battle station.

Upon arrival I found the hatch covers blown off and fire and stifling, blinding smoke coming out of the whole hatch area. I could hear cries of "Help!" I tried to enter but smoke and hot air were coming from the booby hatch in such stifling, acrid billows that it was impossible. I then ran back to my cabin, grabbed a gas mask and battle lamp as all lights forward were out. I ran forward again in time to help one of the ward patients out of the port booby hatch, the ladder having been partially dislodged by the explosion. I tried to enter both booby hatches again but they were both equally impassable in spite of the gas mask. Even with the battle lamp the smoke was so thick that I could see only 2 or 3 feet and frequently was compelled to step away to get a breath of air. We could still hear the cries, and several others besides myself tried to enter the burning hold but could not. . . .

With the help of Mr. Tol, a fourth engineer, I then obtained the Jacob's ladder from opposite hold #2 and lowered it into hold #1 on the starboard side. One man came up this ladder almost immediately after it was lowered. Some cries were still faintly heard and we tried to direct these men to come to this ladder since it was still impossible to go down as the fire was gaining in fury.

All troop passengers had been ordered aft. The Dutch crew explained that all possible was being done. Soon the voices were no longer heard; it seemed about 15 minutes after the explosion.

I then hurried to hold #5, a second battle station, calls having come from there for my help. I found approximately 10 men laid out on mess tables, all being well taken care of by our



Sommersdijk's crew

corpsmen. . . . The serious cases were given morphine and were being splinted and bandaged.

Next I went to the wardroom where we had a second battle station and found four or five injured men laid out on tables and also one of our corpsmen, Bell, had a badly swollen face and bleeding nose. Dr. Lee, a passenger, was helping the corpsmen on duty here and everything was going well. I then went forward again in a vain effort to get down the hatch and to get more water on the fire which was going stronger. Seeing again that this was impossible, I returned to hold #5 where major and minor injuries were coming in fast. About 20 men were now laid out on tables and others sitting about on tables and benches. Most of these were injured by the steel beams which fell in hold #2 when they were dislodged by the explosion. It was decided to give plasma to the more serious and four or five units were broken out and administered. Dr. Lee had come down and I requested him to give a unit to the man with a partial traumatic amputation of the foot in the wardroom.

By this time an Australian corvette was alongside and had hoses and men over fighting the fire. Evacuation of casualties was considered with the corvette's skipper, CDR Hunt. It was decided that, if possible, evacuation would be simpler by daylight.

Soon it was reported that the fire was spreading, even with the corvette's six or eight hoses going full blast. Smoke was coming into the wardroom and midship's area. In the meantime the ship's captain had ordered the anchor chain released and the ship moved to a shallow area, where if the ship sank, the uppermost structures would be out of water. The patients in the wardroom were ordered further aft to hold #5.

About this time two CB medical officers came from shore with a few corpsmen and offered their services. They stated that facilities were available ashore for taking care of all casualties.

On considering the situation again with CDR Hunt and our CO, it was decided to send all casualties ashore. This was modified when it was learned that there were no X-ray facilities



Where the torpedo pierced *Sommeldijk's* hull at the waterline.

ashore. The plan then was to take all ambulatory patients to medical facilities ashore by LCTs coming alongside the corvette. (All troop passengers had previously been disembarked by LCMs). All stretcher cases were to be taken aboard the corvette for removal to a hospital ship in the a.m. or sooner if the fire increased. It appeared by this time that the fire was abating although it had spread through hold #2 and the bulkheads of #3 were getting hot.

Tags were placed on all casualties and the above plan was carried out. The ambulatory patients (24) have gone ashore and the stretcher cases (11) are aboard the Australian corvette *Gascoyne* under the care of Dr. Lee. The crew of the *Gascoyne* are now gallantly and with some success fighting the fire. Although it spread to hold #2 some time ago, the bulkhead of #3 is now very hot. Again, a short time ago, I tried to enter hold #1 but to no avail.

On checking the corpsmen whose quarters were in #1, one is missing—Newman. He had been seen after the explosion but seemed to be in a dazed state and complained of a back injury. Shortly after this it was reported that several men had jumped or been

thrown overboard and had been picked up by the boats from shore. (One of these men had hold of the anchor chain when it was released, another swam around the ship to the gangway, managed to climb up and walked aboard.) Newman may be among these or he may have disembarked with the troops.

All six men who were patients in the sick bay ward escaped out of hold #1. Also the eight corpsmen who were in their quarters managed to get out. Three troop passengers and our chief steward's mate who were also in the corpsmen's quarters escaped. There was a possibility of a few additional troop passengers being in hold #1 at the time of the explosion as they may have entered in the short interval between the alarm and the explosion since it had been drilled into them to enter any available hold immediately on hearing the air alert signal. Also a few men sitting or sleeping on top of the hatch may have fallen back into the hold when the hatch covers were dislodged or blown off.

The Jap's plane, a torpedo bomber, came out of a cloud in the darkness and was seen by a large number of men

in a lightninglike swish approaching the ship with engine cut. Many also saw the wake of the torpedo and the plane crash into the water just a few hundred yards off the port bow.

It is now a little after 0600 on 12-26-44. The Javanese boys are beginning to prepare coffee, and faint daylight is appearing in the east. Everybody has cooperated marvelously in a sad Christmas tragedy, and our CO has vowed he will never curse another limey, after their exceedingly splendid job of certain rescue of a burning American ship.

Aboard *Sommeldijk*, 12-27-44

By 0645 yesterday morning it was fairly light, and the smoke had cleared from hold #1 so that it could be inspected from the upper deck. Sad to say the bodies of three men could be made out among the wreckage. The tangled mass of debris in the hatch area can hardly be imagined; hatch covers, boxes, tables, and steel beams had been blown into the air and then fell back helter-skelter to burn and become a charred, seared mass. The body of one man was free of debris. He had a 5-inch scalp gash exposing the skull and had apparently been struck or fallen through the hatch, knocked out, and died of suffocation and burns. The bodies of the other two were tangled and caught in the wreckage. One had a compound fracture of the tibia and was badly burned. The other was charred beyond recognition. All three were brought topside and identified. Fortunately, the charred man still had a dog tag, another had a dog tag, and the third was identified by the ID card found in his wallet. The dead numbered six.

The total count of casualties evacuated was 24 ambulatory and 11 stretchers. One man almost had a foot cut off by one of the two beams which fell in hold #2. Another was superficially burned about the neck and chest and had great pain on moving his neck. Another had both legs broken. There were several broken legs and ankles and many back injuries. There were numerous contusions, scalp



Crewmen remove a casualty from hold #1 following the torpedo attack on *Sommelsdijk* by a Japanese "Kate."

wounds, and a few burns. The treatment consisted largely of first-aid as this was all there was time for.

On shore it was learned that the Jap pilot who struck our ship had swum ashore and had been killed by a shot through the neck by a sentry. His body had been transported to various ships and about the town of Geewan for exhibition. He was said to be about 22 years of age, very husky, and clad in only a lifejacket, shorts, and goggles.

In the latter part of the morning it was possible to get down into the hospital and dispensary area which was a total wreck. By forcing his way inside the dispensary door CPhM Kennedy discovered a 4th body. This man had apparently been trapped by the blast and died of burns. He was identified as one of the CBs and arrangements were made to remove him to Tacloban for burial.

A cursory inspection of the hospital, operating room, and dispensary areas has shown almost complete destruction of our equipment and supplies.

This p.m. we were greatly relieved to learn that our missing corpsman, Bill Newman, was alive. He had disembarked with the troops in a confused state of mind and was getting medical attention ashore.

We have many things to be thankful for. First, although the sick bay was wrecked, there were fewer men in there than any other hold on the ship. Second, we were struck close to land where almost immediate help was available. Third, the alarm had not sounded long enough before the strike so that hold #1 was not crowded with men as usual after the alert. Fourth, we were struck on the port side of the sick bay, the corpsmen's quarters and the hospital ward being on the starboard

side. Fifth, we were not struck in the middle of the night with many men sleeping on top of the hatch.

For the past 2 days we have had a salvage ship on each side with powerful pumps endeavoring to empty the water from hold #2. At first they made slow headway and the ship had a marked list. The hole in the ship's side is reported to measure 18 by 34 feet.

Aboard Sommersdijk, 12-28-44

Two more bodies were discovered deep in the debris in hold #1 this a.m. Both men had apparently been sleeping on top of the hatch as this was known to be their custom. When the explosion dislodged the hatch covers they fell into the wreckage below and burned to death. Both were identified by dog tags on chains around their necks. Identification otherwise would have been well nigh impossible.



Photos courtesy Dr. Dean Mawdsley

The morning after: smoke still pours from hold #1.

The hole which extended into hold #2 has been partially closed and nearly all of the water has been removed from hold #2. The ship now lists slightly to starboard. One of our salvage ships has pulled away. Unloading has been started in several holds. We have had no alerts today. It has been raining almost constantly.

A temporary sick bay has been set up in one of the officers cabins. We will be short on some drugs, but will probably be able to get needed supplies through shore activities. Most of our drugs were completely wrecked and possible changes due to heat renders the remainder unusable.

Aboard *Sommelsdijk*, 12-30-44

Corpsman Bill Newman returned to the ship today from the CB dispensary. He had been dazed by the explosion and remembered nothing of the torpedo strike nor how he managed to get

out of the hold, nor about getting ashore except he believed he had been on a small boat where the men sounded like Australians (the *Gascoyne*). He reported the other two corpsmen doing well although one was believed to have a broken ankle and the other a possible skull fracture with the break running through one sinus. These opinions were not backed by X-ray as none is available on the island. Newman showed numerous crusted abrasions and a contused right wrist as well as a tender area in the left lumbar region. He still seemed a bit ethereal, but his injuries did not appear serious.

No more bodies have been uncovered, and according to muster reports, all men are now accounted for. The ship is being unloaded slowly and one salvage vessel is still with us. We have had three alerts up to 2200 but have seen no action.

The lessons learned from the experience are: (1) the value of the "dog tag," especially if fastened with a metal chain, (2) the value of having medical supplies and battle stations dispersed about the ship, (3) the value of good first-aid training of corpsmen, (4) the urgent need for better fire-fighting facilities, (5) the downright willingness and sincere desire of many men to be of service in an emergency, (6) the futility of crowding below decks for an air alert, (7) the necessity of locking in place the large steel hatch beams, (8) the necessity for escape ladders in all holds, and (9) the importance of discharging troop passengers immediately on arrival at destination.

(To be continued in the May-June issue)

Dr. Mawdsley, Dr. Ellwood's son-in-law, resides in Hillsborough, CA.



Navy Medicine

March-April 1942

Jennifer Mitchum

"... I should like to tell you one or two stories about the men we have in our armed forces . . .," said President Franklin Roosevelt with that distinctive, patrician voice of authority most Americans had grown accustomed to. As he began another of his fireside chats on the evening of 29 April 1942, this, like all his other informal radio broadcasts, was a pep talk, beamed to a nation unaccustomed to defeat and reeling under the Japanese onslaught in the Pacific.

That evening President Roosevelt told a story of bravery and heroism—one of LCDR Corydon M. Wassell, a Navy doctor serving in Java, who risked his life to save others. Dr. Wassell arrived in Java in late January as Allied forces were putting up a last line of defense for the Dutch East Indies and trying to hold Makassar Strait from the invaders. In trying battles that followed, USS *Houston* was lost and USS *Marblehead* severely damaged. With her steering gear shattered and large holes in her side, *Marblehead* staggered into port at Surabaya, Dutch East Indies, carrying wounded of her own and *Houston's* survivors.

Dr. Wassell sorted the casualties and assigned them to several hospitals. Medical personnel later transferred patients to a town in the hills less accessible to the Japanese. Shortly afterward, Allied forces began evacuating to Australia. ADM Thomas C. Hart, Commander in Chief of the Asiatic Fleet, ordered Dr. Wassell to evacuate "all the wounded who can stand a hard trip." (1) Hence, Dr. Wassell sorted the patients and found 10 men, one being *Marblehead's* executive officer, LCDR William Goggins, who were too badly injured to be transferred. Concerned about their well being, Dr. Wassell opted to stay behind with them and await capture by the Japanese.

But instead of sitting idly by waiting for the enemy, Dr. Wassell made a desperate attempt to get the men out of Java and to safety. "The way I figured it," (2) explained Dr. Wassell, "was if I could find a way of getting those ten men out of Java while the getting was good—a way they could stand in the state they were in—there wasn't any reason on earth why I shouldn't." (3) The possibility looked dim until he

met a British colonel who was organizing a motor caravan of antiaircraft batteries to go to Tjilatjap. The colonel agreed to take the doctor and his patients.

"A Dutch rating at the hospital helped me put fresh dressings on the burn cases," (4) recalled Dr. Wassell about the evacuation that had to be completed within 20 minutes or they risked being left behind. "All we had to use was sulphur ointment, and not enough of that. We did the best we could to make the men fit for evacuation. The rating stole mattresses and we carried them on them to the caravan. . . ." (5)

Dr. Wassell loaded LCDR Goggins and three other patients into a brand new Ford that he was to drive. "Most of it was driving in the dark with dimmed lights. We dared not attract Jap planes. The road was terrible, rutted and blown into shell holes in places. The red taillight of the car ahead bobbed and swung like a drunken man's lantern," (6) he said.

After about a day's trip, the caravan reached Tjilatjap, where a small Dutch coastal vessel was preparing to set sail.

Following an attack on *Marblehead* by Japanese bombers, a wounded sailor pauses for coffee on the deck of his stricken vessel. Two bomb hits accounted for nearly 80 casualties.

Photos from BUMED Archives



About 800 evacuees, which included Dr. Wassell and nine(7) of his patients, crammed into the ship accustomed to transporting about 150 passengers. They sailed for the Indian Ocean without incident that night but were hit the next day and had to pull into the nearest port for repairs.

Shook up by the sudden turn of events, most of the passengers chose to stay behind and be captured rather than risk shipwreck trying to reach Australia. However, Dr. Wassell and his patients continued the trip even though the odds of reaching Australia were extremely slim. After a 2-week voyage, the ship docked at Perth, Australia, on 15 March. There, Wassell assisted medical personnel in a Freemantle warehouse acquiring medical supplies for submarines carrying food and supplies to the defenders of Bataan and Corregidor.

Battle for Bataan

Although most of the Asiatic Fleet left the Philippines in December 1941, a small garrison remained to support the ground forces on Bataan still holding out and prolonging what would have been an easy Japanese takeover.

However, conditions steadily worsened for the defenders. Food and supplies dwindled and disease was rampant. By March, most of the troops suffered from malaria, scurvy, beri-beri, and dysentery. Medical personnel improvised and often went to extremes to render medical care. For example, LT Murray Glusman, MC, treated patients in foxholes and assisted with an amputation in a ditch while serving in the vicinity of the Mariveles Naval Station.

Similarly, ENS Ann A. Bernatitus, NC, the only Navy nurse sent from Manila to Bataan, faced major obsta-

cles in caring for patients at field hospitals in the second line of defense. She recalled how they sterilized instruments in kerosene-operated pressure cookers and also by placing them in Lysol and later rinsing them with alcohol. "How quickly you needed the instrument determined how purely things were sterilized." (8)

During her 3-month stay on Bataan, Bernatitus moved from "one improvised hospital to another." (9) A few days before the Japanese seized the island, the hospital in which she had been working was nearly destroyed, forcing them to evacuate patients in traction with some falling from their beds in agony.

Some medical personnel barely escaped capture on Bataan leaving on the last boats out. PhM2c Ernest J. Irvin, was among those who barely made it to Corregidor. He had been serving with "C" Battery of the Third Battalion, Fourth Marines in a large rice paddy along the beach road between the Naval Section Base and the Quarantine Station, Mariveles. Two weeks before Bataan fell on 9 April, his unit was assigned to an

Army unit, the 60th Coast Artillery. "... The outfit I was with didn't get over till the day Bataan fell. We made it on a tug—70 of us crammed in the hold like sardines," (10) recalled



LCDR Corydon M. Wassell, MC, USNR, received the Navy Cross for heroism.



Marblehead wounded are loaded aboard a hospital train at Tjilatjap, Java.

PhM2c Irvin adding, "... I could scarcely breathe. Right about then someone asked if there was a doctor aboard. I jumped up and there was a Filipino with his arm off. Just before we boarded the tug our boys were blowing up everything they could on Bataan. A rock actually tore his arm off. He was going to die. I applied a tourniquet and stayed with him all night long up topside where it was cool." (11) "C" Battery arrived on Corregidor the morning of 10 April.

Corregidor's Last Stand

About 2 miles from the Bataan peninsula lay Corregidor. "The Rock" as it was called, was now the only obstacle holding up total Japanese victory in the Philippines. On the island, Allied forces had set up a hospital, communications center, and storage area in the Malinta Tunnel, an underground complex dug into a hill-

side. PhM2c Irvin was assigned to beach defense as were most of the medical personnel.

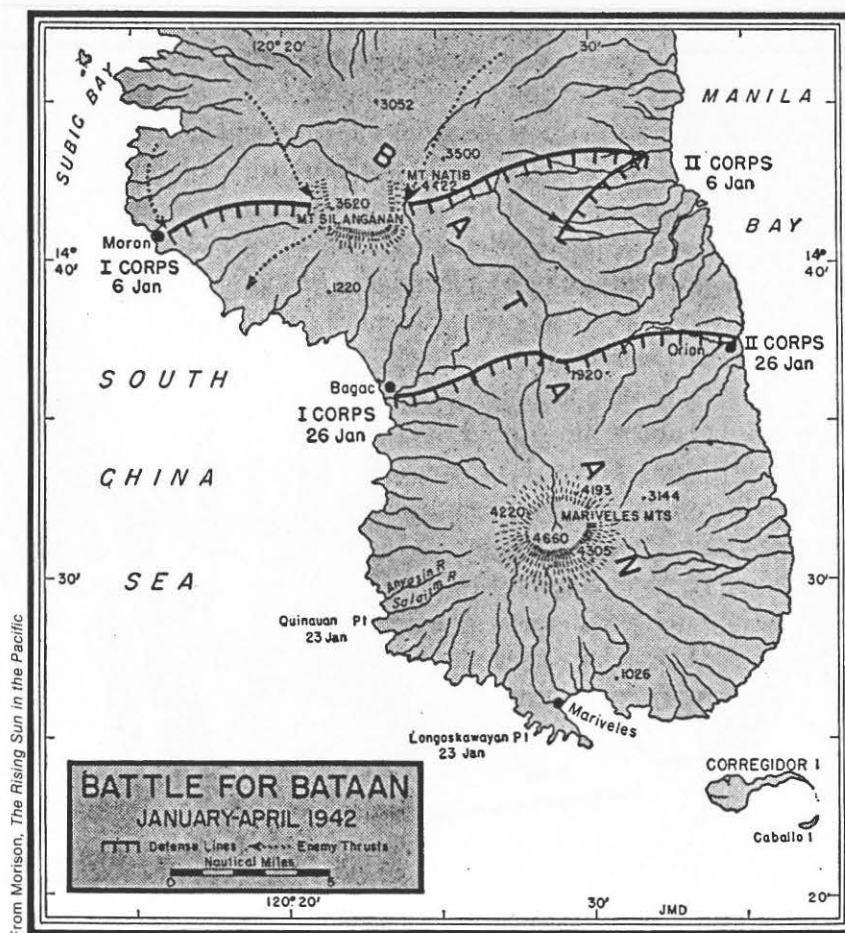
Dr. Glusman had just made it over also. He served briefly in the Malinta Tunnel as assistant battalion surgeon with the First Battalion, Fourth Marines before serving in the same capacity with the 4th Reserve Battalion, 4th Regiment, U.S. Marines. He administered emergency medical care to members of the Headquarters and Service Company and accompanied those seriously wounded back to the Malinta Tunnel hospital under increasing Japanese bombardment.

LT George T. Ferguson's team also operated under adverse conditions. Dr. Ferguson was the battalion surgeon for the First Battalion, Fourth Marines, the unit to which LT Glusman was originally assigned. He and his men had gouged a shallow tunnel in a cliff to accommodate a dozen

patients, medical personnel, and equipment. During the last 3 weeks of resistance, their sector was on the receiving end of 60 hostile batteries. With around-the-clock shelling, the Japanese later reported that they had fired 3,500-4,000 shells per hour. Nonetheless, Dr. Ferguson and others treated numerous cases of malaria, dysentery, food deficiency diseases, and upper respiratory infections in the field, helping to preserve beds in the Malinta hospital for the most serious cases.

Saving Lives in Manila

While medical personnel on Corregidor worked diligently to keep as many men at guns as possible, their counterparts in Manila were fighting battles of another sort as they cared for hundreds of POWs. The Japanese continued to transfer patients and personnel from Santa Scholastica College



Some survivors of the battle for Bataan managed to escape to Corregidor, but within a month they too would become POWs.

to Pasay Elementary School, about a mile and a half from the college. The captors told the hospital staff that they were being moved to a well-equipped hospital where the patients could finish convalescing. On the contrary, living conditions at the school were "extremely bad, sanitation deplorable, food almost nonexistent, the place filthy and overcrowded." (12) Meals consisted of rice and occasionally small amounts of greens. For quarters, the Japanese assigned about 20 senior medical officers to a room and between 40 and 60 enlisted men to a room. There were about 350 Filipino and American prisoners at the facility, and disease and starvation were rampant throughout.

Hospital personnel set up a small dispensary in one of the rooms. "The Japanese had permitted each group to bring along small quantities of medicines and surgical equipment, but in addition each of the doctors and corpsmen had secreted in his personal effects as much as he could hide away of the more useful medicines, such as quinine, sulfa drugs, amebicides, aspirin, etc. And it was this hidden supply that furnished most of the medicines used for the treatment of the patients for the next two months," (13) said CAPT L.B. Sartin, MC, who was the senior officer of a group transferred to the school on 24 April.

Occasionally, a Japanese doctor brought urgently needed medicines to

the school but in quantities insufficient for the number in need. "... On one occasion he brought a few bottles of medicine as supplies for us, but the entire quantity was contained in a shoe box," recalled CAPT Sartin. (14)

Navy Medicine at Sea

Serving in both the Pacific and Atlantic Oceans were the Navy's two hospital ships, USS *Solace* and USS *Relief*, respectively. *Relief* served at Norfolk, VA, and then sailed to Casco Bay, ME, to care for men training to man U.S. fighting ships. She arrived there on 28 April. *Relief* crewmembers also attended victims of naval combat action in the Atlantic.

Solace, which proved her worth when Pearl Harbor came under attack, set sail for the Pacific on 23 March. Sailing to Pago Pago on Tutuila Island, Funafuti in the Ellice Islands, and Nukualofa on Tongatapu Island, she provided medical care for Allied troops on the islands and picked up casualties from transports. *Solace* served away from battle during this period.

Medical personnel aboard other vessels found it very difficult to provide adequate medical care because the conditions under which they served were drastically different than those on the hospital ships. Medical wards were small, overcrowded, and had insufficient personnel. Moreover, the ships ran full speed in danger zones to avoid being hit by the enemy. If hit, medical personnel had to evacuate patients using lifejackets, kapok-filled mattresses, bamboo, and all other floatable wreckage.

Transferring patients from one vessel to another was also difficult. LT Joseph L. Yon, medical officer of USS *Pecos*, described the difficulties his crew encountered picking up survivors of USS *Langley* from two American destroyers:

The boatswain got one of the motor launches away and made trip after trip to the destroyers, which were lying as close alongside as was safe, bringing back a load of survivors each time. Have you ever seen a small boat bump against a



At Bataan and Corregidor, a thin, sick, and hungry line of American and Filipino troops held the Japanese at bay while they awaited reinforcements that never came. Here a marine instructs his Filipino comrades on the use of a drum magazine.

large ship in heavy weather? Then you know the job the boatswain had holding the motor launch steady in the dark while lines were secured to Stokes stretchers and the wounded hauled aboard. (15)

Pecos was hit shortly after rescuing the survivors of *Langley*. Lowered over the side of the ship with every injured man was an uninjured sailor to look after him. Survivors of *Pecos* were rescued by one of the destroyers they had evacuated earlier.

KIA (killed in action)

Three pharmacist mates went down with *Pecos* and seven with *Langley*. Others killed in the vicinity of the



LTJG Ann Bernatitus, NC

Dutch East Indies included a doctor and three hospital corpsmen who had been serving on *USS Asheville*. In the Java Sea, 1 dentist and 12 hospital corpsmen went down with the famed *USS Houston*. A doctor and a corpsman were also killed aboard both *USS Pillsbury* and *USS Edsall* also in the Java Sea. In the Atlantic Ocean, two hospital corpsmen were killed in action aboard *USS Atik*.

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Ms. Mitchum is special assistant to the Command Historian, Bureau of Medicine and Surgery (09H), Washington, DC 20372-5120.

Mental Health Issues in Overseas Screening

LT William J. Mea, MSC, USNR
LCDR John Chahbazi, MC, USN

"There is no sense holding on to men without stability who are blown over by the first breath of battle."

—Lord Moran from *Anatomy of Courage*

Medical clearance for overseas or isolated duty by naval servicemembers and for accompanying dependents is an important and often difficult decision for the screening medical officer. Clearance of those with demonstrated psychological problems is a disservice to the member and creates risk for the receiving command. Failure to consider the effects of overseas hardships and limited medical or community facilities often creates havoc with vulnerable servicemembers and their families in their new environment.

A thorough medical evaluation including psychological history is critical when trying to answer the questions "Will this person be safe and effective at the proposed duty station?" and "Can the receiving medical facility support the needs of this member and his or her dependent(s)?" These questions should be second nature to those tasked with the responsibility. This guide for medical officers will help to ensure their best informed judgment in their attempts to answer the questions accurately.

Medical officers who have not been stationed OCONUS rarely have the military perspective that such duty brings. Conversely, those stationed in places such as Adak, AK; Guantanamo Bay, Cuba; and Diego Garcia quickly become familiar with the needs of the line and the limitations of medical support facilities in dealing with psychiatric illness. Proper resource management uses such experience to ensure high morale and productivity. As an integral part of the screening process, the medical officer is a critical

member of the Navy's Human Resource Management Team.

Screening Instructions

OPNAVINST 1300.14A (Suitability Screening for Overseas Assignment), NAVMEDCOMINST 1300.1C (Suitability Processing for Overseas Assignment of Navy and Marine Corps Members and Their Accompanying Dependents), and NAVPERS 15909D Ch. No. 2 (*Enlisted Transfer Manual*) provide basic guidance and should be read carefully by every screening medical officer. Usually this means by *every* medical officer since most will do screenings at least occasionally. It is not good enough that the officer in charge of the screening program has familiarity with these instructions.

OPNAVINST 1300.14A, dated September 1988, notes that "absence from duty and early returns" resulting from improper screening "exacerbate manning deficiencies" and impose "additional burdens to commands." "Service-member(s) or dependents must not present medical problems, attitude, or personal characteristics which could be expected to preclude them completing a successful overseas tour." "Screening must be broad enough to detect a wide range of existing and potential problems." It points out specifically that "personal characteristics and attitudes are important to the suitability decision . . . motivation, tolerance of others, and adaptability" are important considerations.

NAVMEDCOMINST 1300.IC, dated March 1989, states that reports of continuing problems have been encountered in members and dependents arriving overseas with conditions "beyond the capability" of the local facility. It further states that all medical and dental officers performing screening must be thoroughly familiar with the instructions. A complete medical history (Standard Form 93) and physical exam (Standard Form 88) are used to "ensure that all potentially disqualifying impairments" requiring special medical care are noted on the screening review form (Medical and Dental Overseas Screening Review for Active Duty and Dependents).

The *Enlisted Transfer Manual* (NAVPERS 15909D) is especially instructive. It specifies a number of screening decision factors including drug-related and alcohol problems, psychiatric disorders, disciplinary history, and individual and family characteristics. Overseas duty is precluded when a condition may be exacerbated or require early return to CONUS or higher-level medical care facilities.

While psychological diagnoses may tend to be vague, it is critical that any person with a condition of a pathologic nature be referred to a military mental health specialist for further evaluation. The request for consultation should ask not only for diagnostic information, but also for a recommended disposition (with specific mention of the overseas screening in progress). Any questions should be referred to the highest-level mental health care provider at the overseas command.

NAVPERS 15909D deals specifically with personnel with a history of alcohol abuse. They are considered suitable for overseas/isolated duty only if they have completed 6 months of alcohol rehabilitation and aftercare. Documented drug-related offenses or a history of civilian or military legal infractions make an individual ineligible for 2 years.

Specific psychological history is critical in overseas screening. NAVPERS 15909D allows a person who has had one psychiatric hospitalization to be considered for overseas assignment. Overseas assignment is also possible for a patient who has been given a diagnosis of adjustment disorder as a response to a particular stressor where no severe underlying personality disorder is present, hospitalization is brief, and the member's reintegration is healthy. Where more severe pathology is present, overseas assignment should not be considered although the instruction is vague on this point.

Screening Errors

The most common psychological screening problems that will present to the medical officer are overly vague DSM-III-R axis I diagnoses, inadequate documentation of psychological treatment, civilian evaluation as the sole input, hidden or incomplete past history, and ignored or undiagnosed personality disorders. A second opinion should be obtained unless the screening medical officer is

confident that there is no pathology. Screening errors bring hardship to those inappropriately screened and to their command, along with embarrassment when a message returns saying that the member is medically unsuitable. These system failures are also serious threats to operational readiness and are fiscally wasteful.

There are times when information of a psychopathologic nature may be present in the record, but in the effort to complete processing quickly it is overlooked or misinterpreted. As an example, it is not uncommon for civilian providers to treat members or their families for a psychological "problem" fitting an axis I diagnosis like adjustment disorder when a personality disorder (axis II) is the true diagnosis. Diagnoses in the civilian world are often guided by what can be reimbursed by insurance. Additionally, the need to build a therapeutic alliance with the patient sometimes makes an axis II diagnosis undesirable. Unfortunately, axis II diagnoses do not remain hidden for long.

When questionable material arises, it is best to contact the receiving treatment facility and confer with the appropriate military mental health professional. Because many military psychologists and psychiatrists have not been stationed overseas, sole reliance on in-house consultation may not reflect adequate knowledge of overseas exigencies and limitations. Attempts to contact the receiving command may cause small delays, but these are far more tolerable than the time, expense, and hardship involved in relocating a member and his/her family after a permanent change of station.

Screening Process

The screening process involves a great deal of tedium, paperwork, and a push to finish quickly with little or no reward for a job well done. These forces, along with the servicemember's desire to reach his destination with as little hassle as possible, can collude to cause a less than fully informed evaluation. Patients will frequently hide information or put it in the most favorable light so as to minimize the likelihood that they will be held up in processing. It is not uncommon for patients to purge their medical records of any psychiatric diagnosis or treatment or to answer in the nonpathologic direction on Standard Form 93.

On careful review of the medical record, severe psychiatric problems may become evident in the "nonpsychiatric" entries. The concerned medical officer can create an atmosphere of openness by establishing good rapport early. One way to do this is to focus on the process more as a preparation for the overseas move than as a hoop through which the member and dependents must jump. This is often difficult because of the stress associated with the impending move and the number of things needing attention. It is *most* important that adequate time be allowed for the visit. It follows that the number of individuals being screened should determine the duration of the

appointment, and screening should always be done by appointment only. Finally, one of the most common errors is screening without the medical record in front of the physician.

An example of one of the above pitfalls was a female servicemember who had been treated over the course of a year for marital problems and depression. She removed all psychiatric entries from her medical record and hid pertinent information from the screening medical officer. Nonetheless, she presented within 1 month of her transfer for psychiatric evaluation and demanded resumption of her prior treatment. Her husband was seen emergently on several occasions following alcohol-related incidents. Later, after allegations of child neglect surfaced and their child was expelled from daycare, the child's father brought him to the medical facility with an urgent plea to "fix him." The family did not desire treatment as a unit and the command wanted to keep the member on board because she was a "stellar worker." Such cases are not unusual.

Personality Disorders

Personality disorders pose a unique problem for screeners. Vague instructions and difficulties in diagnosis may make it difficult to make accurate assessments of these patients. OPNAVINST 1300.14A allows members diagnosed as having a personality disorder who have not exhibited a manifestation of the disorder in their work to be cleared by their command for overseas duty. There is a tendency on the part of line commands to forget about problems when they are "old business." Moreover, commands will sometimes try to pressure mental health professionals to clear an individual for overseas assignment. Sometimes this is self-serving in that the command is trying to rid itself of a problem. Other times it is more altruistic in that it is everyone's wish to remember a coworker in the best light possible.

Personality disorders are enduring conditions that are sometimes hard to pick up because their manifestations change with changes in the individual's environment and stressors. Training medical professionals the subtleties of personality disorders is difficult. Putting such responsibility on nonmedical professionals is bound to cause problems. In such situations where a disagreement may arise, the advice of a helpful commanding officer comes to mind: "You do your thing Doc and let's agree to disagree." The medical officer can offer a professional recommendation against approval for overseas duty, but the final decision is still left to the commanding officer who must then take full responsibility for the consequences. This leads to advice from another commanding officer: "Always do your best evaluation and arrive at the best medical diagnosis, disposition, and treatment for the Navy and the patient."

Special Programs for Dependents

There are special programs in the Navy that become significant in the overseas screening process. Oftentimes, a

dependent requires special treatment, counseling, or education. On occasion, such needs can be met in overseas or isolated locations, but the need must be clearly documented and arrangements made for inclusion of the dependent in such programs *prior* to transfer since space may be limited. In one startling case, a member's daughter was cleared for overseas transfer, but had a history of treatment with psychotropic medications for depression. When the father was interviewed by the medical screener he stated he needed the overseas billet to advance in rank, that his child no longer exhibited problems, and "besides, I stopped giving her the medications." After several months at the OCONUS facility, the child began to exhibit bizarre symptomatology at school. Despite a recommendation by a clinical psychologist to return the family to a location where the child could receive proper treatment in the Exceptional Family Member Program (EFMP), the servicemember fought such a move. Ultimately, the father returned the child to CONUS to be left with a relative who had had custody of the child when the abnormal behavior first emerged. Similar problems can be prevented if servicemembers are made aware of EFMP and other special programs available at some overseas facilities so they can adjust their dream sheets accordingly.

OPNAVINST 1300.14A states under "dependent screening" that "evaluation of present or potential family problems which may adversely impact on performance are inherent in the suitability decision." It further states that "the servicemember will be held accountable for any undisclosed family problems."

Conclusion

In the best of all Navy worlds overseas screening is an efficient, brief, and painless process whisking the member and his/her family to their eagerly awaited new tour. In real life the process is fraught with numerous difficulties, especially in the psychological sphere as has been shown. This dictates a thorough and unrushed investigation of any potential psychological problems. By ensuring the best human resource management, support of the line, and service to the active duty member, careful review and consultation by the screening medical officer pays off handsomely in time saved and hardships avoided for the entire Navy community.

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Dr. Mea is a staff clinical psychologist at the Midshipman Counseling Center, U.S. Naval Academy, Annapolis, MD 21402. Dr. Chahbazi is assigned to the Family Practice Department, Naval Hospital, Charleston, SC 29408-6900.

Asthmatics in the Navy

Although servicemembers with recurring cases of asthma are barred from combat situations, some make it into the battlefield because of asthma's reversible nature.

Asthma is a condition marked by recurrent attacks of difficult or painful breathing, with wheezing due to sudden contractions of the bronchi. Asthma is a reversible disease; symptoms may disappear for a period of time and then reappear later.

Some cases of asthma are allergic in nature. Aeroallergens, irritant particles such as pollen or dust, provide a constant source of bronchial inflammation that increases bronchial hyperactivity. Other cases are provoked by a variety of factors including vigorous exercise and psychological stress. Sometimes asthma can be fatal.

CAPT Donald R. Hauler, MC, is the director of the Physical Qualifications and Review Division at the Bureau of Medicine and Surgery. He is responsible for recommending medical waivers for accession into the Navy and Marine Corps regular and reserve forces.

"A history of asthma, or reactive airway disease, is the second most common cause for rejection for accession into the naval service, with orthopedic conditions as number one," said CAPT Hauler.

The Department of Defense Directive 6130.3, Physical Standards for Enlistment, Appointment, and Induction, is used by all branches of the armed forces. It lists "asthma as a reactive airway disease, exercise-induced bronchospasm, except for nonrecurring childhood symptoms that have required no medication since the 12th birthday," as cause for rejection for appointment, enlistment, and induction.

However, some applicants who have a past history of asthma are allowed to enter the Navy. Applicants who have been symptom-free for several years, have a history of aggressive and vigorous sports activities, and have not required the use of medication for their asthma condition, may be candidates for a medical waiver.

To ensure that candidates for waivers are suitable for service, they are required to submit to an internal medicine or pulmonary evaluation test, undergo pre- and post-exercise pulmonary function tests, and, in some cases, undergo a methacholine challenge test.

"Our statistics show that recruits who have been granted medical waivers for this condition have an extremely small percentage of attrition," said CAPT Hauler.

Many servicemembers who have problems with asthma on active duty failed to disclose a prior history of symptoms similar to asthma during the military entrance physical examinations. Consequently, they were not evaluated for abnormal pulmonary function tests.

Military personnel who develop asthma while in the Navy, undergo a thorough medical evaluation to determine if they are fit for continued service. If the evaluation determines that they are not fit, they are separated. If determined to be fit for duty, asthmatics are, whenever possible, stationed where special medical assistance is readily available and where activities are less strenuous.

Servicemembers with undetected asthma encountered several difficulties during Operation Desert Shield/Storm. They suffered irritation from smoke caused by the Kuwaiti oil fires and from fine sand particles in the air. They were also often unable to tolerate wearing gas masks, which inhibited the intake of air for breathing. Some had adverse reactions to pyridostigmine, a drug given to protect troops from nerve gas.

With proper disclosure of medical history and continued use of the pulmonary function test, and other related evaluations, the Navy will be able to separate those servicemembers with recurring cases of asthma. This will help maintain the high level of readiness necessary to function in a combat environment.

—Story by Jay Brown, BUMED Public Affairs.

In Memoriam

CAPT **Albert R. Behnke, Jr.**, MC (Ret.), father of the Naval Medical Research Institute (NMRI), pioneer in the physiology of diving, and expert on decompression sickness (the bends), died in San Francisco, CA, on 16 Jan 1992 after a long illness.

It was in 1936 that Dr. Behnke began outlining his idea for a medical laboratory (modeled after the Harvard Fatigue Lab) which eventually became the Naval Medical Research Institute. Behnke served as NMRI research executive officer from 1942 to 1950.

Born in Chicago in 1903, he graduated from Whittier College in California in 1925 and received his M.D. degree from Stanford University in 1930.

Following his internship at Naval Hospital Mare Island, he became assistant medical officer to USS *Holland* and Submarine Division Twenty at San Diego, CA, where he began his lifelong association with deep sea diving. While in San Diego, Dr. Behnke was aware of a sailor who had died as a result of shallow ascent training. In a remarkably astute letter to the Surgeon General published in the April 1932 issue of the *Naval Medical Bulletin*, Behnke discussed causes for lethal air embolism in these accidents.

In 1932 Dr. Behnke was ordered to the Harvard School of Public Health in Boston, MA, for postgraduate training and research relative to diving and submarine escape training in the Navy. In 1935 he reported for duty at the Escape Training Tank at the Submarine Base at Pearl Harbor, HI, where he was encouraged to improve Navy operations through scientific investigations and research—his laboratory idea taking form.

In 1938 he returned to the Naval Medical School co-located with the Washington Naval Hospital at 23rd and E Streets, NW. He was also assigned medical duty at the Experimental Diving Unit (EDU) in the Navy Yard. Dur-

ing this time he carried out research projects at EDU, continued his traveling as medical member of the Ship Studies Team, maintained contacts with scientific consultants and researchers, and continued to dream of a medical laboratory as a base for his investigations.

In 1939 when the submarine *Squalus* was reported overdue while conducting sea trials at sea 15 miles off Portsmouth, NH, Behnke went to the scene with several noted diving specialists including CDR Charles "Swede" Momsen, Dr. Pete Yarbrough, and Master Diver James McDonald from EDU. CDR Allan McCann, Dr. Tom Wilmon, and more divers arrived shortly thereafter.

Thirty-three persons survived the initial flooding and were rescued. Salvage of *Squalus* was successfully carried out by divers using techniques for helium-oxygen diving that had been recently developed at EDU.

President Franklin Roosevelt had, since his days as Undersecretary in 1915, always considered it his Navy and, as a polio victim, had an abiding faith in the importance of medical research. Dr. Behnke wrote asking that plans for the new Navy Medical Center in Bethesda, MD, be augmented to include a Navy medical research laboratory. With the interest of the White House known, the request was approved.

Behnke returned to Pearl Harbor early in December 1941 and was at sea on USS *Lexington* when the Japanese attacked on 7 Dec 1941. He returned to Washington where he worked with BUMED, the Bureau of Ships, the Naval Medical School, and EDU.

The Naval Medical Research Institute was formally established in October 1942, and Behnke moved there as research executive officer. Bright young scientists of his acquaintance were contacted and directed to the Navy or, hearing of their commissioning, Behnke worked to have them ordered to research duty under his supervision. Projects were staffed and executed in Bethesda, in the Navy Yard, in the field, or on platforms at sea and results published as technical memoranda, NMRI reports, or articles in scientific journals. Ongoing projects covered almost every conceivable question of importance to Navy operations—aviation, undersea, ventilation, thermal stress and protection, diet, potable water, etc.

Dr. Behnke remained at NMRI until 1950. Responding to a suggestion that NMRI needed a biophysics research section, he helped establish a small but dynamic group of young scientists in that field. Five were later elected to the National Academy of Sciences.

In a final assignment Dr. Behnke became medical director of the Naval Radiological Defense Laboratory in San Francisco. After his retirement in 1959, he became professor of preventive medicine at the University of California, San Francisco. In the early 1970's he was medical consultant to the Bay Area Rapid Transit (BART) project.

—By CAPT Robert Bornmann, MC (Ret.)



Dr.
Behnke

RADM Cecil D. Riggs, MC (Ret.), died 27 Feb 1992 in Arlington, VA, after a brief illness. He was 86.

Dr. Riggs had a distinguished and unusual 37-year career in the Navy. He served in the Yangtze Patrol as the senior officer of USS *Panay* in China shortly before the gunboat was sunk by Japanese planes in 1937. One of a few Navy physicians awarded the Navy Cross during World War II, Dr. Riggs earned that decoration during the Japanese attack on Pearl Harbor, where he served as medical officer and flight surgeon on the staff of Patrol Wing Two. The citation read in part: "... Despite the severe enemy bombing and strafing of the Naval Air Station [he], on duty at the time, immediately reorganized the medical facilities available to care for the many wounded men arriving at the station from the damaged ships. . . ."

For his later wartime duty, Dr. Riggs served as senior medical officer on USS *Ranger* (CV-4) in the Atlantic and aboard USS *Bon Homme Richard* (CV-31) in the Pacific.

He briefly returned to peacetime duty as executive officer of the dispensary at NAS Norfolk, VA, and then as chief of the EENT Department at the Naval Dispensary, Washington, DC.

With the Korean War, Dr. Riggs became the commanding Officer of the medical treatment facility aboard USS *Benevolence*. While on her maiden voyage in San Francisco Bay, the hospital ship was accidentally rammed by SS *Mary Luckenbach*. Dr. Riggs again displayed his characteristic heroism when he lashed together a number of Navy nurses before *Benevolence* sank, and directed and assisted in helping several persons board a life raft. Placed in command of the medical treatment facility on USS *Haven* following the *Benevolence* tragedy, Riggs earned the Bronze Star "... in connection with operations against enemy aggressor forces in Korea. . . . By his marked professional skill, sound judgment and zealous devotion to duty, Captain Riggs contributed to the saving of many lives. . . ."

In July 1953 Dr. Riggs was assigned to Naval Hospital Oakland, CA, where he remained until 1955 when he reported for duty at Naval Hospital Bethesda, MD. He then served as commanding officer of Naval Hospital Chelsea, MA, before becoming fleet surgeon on the staff of



Dr.
Riggs

the Commander in Chief, Pacific Fleet. He subsequently served as Pacific medical officer on the staff of the Commander in Chief, Pacific Fleet, where his vigorous pursuit of better care for the wounded of all military services frequently found him in the forward areas of Vietnam, Laos, and Cambodia. Dr. Riggs ended his military career in Washington, DC, in 1967 as the Chief of Naval Operations' Medical Inspector General.

Not content with the idleness of retirement, he inspected teaching hospitals for the American Medical Association, traveling throughout the southeastern United States.

In addition to the Navy Cross, Bronze Star, and Commendation Ribbon, Dr. Riggs' decorations included the Distinguished Service Medal, China Service Medal, American Defense Service Medal, American Campaign Medal, Asiatic-Pacific Campaign Medal with two engagement stars, the European-African-Middle Eastern Campaign Medal, World War II Victory Medal, Navy Occupation Service Medal, Asia Clasp, National Defense Service Medal, Korean Service Medal, and the United Nations Service Medal. He also earned the Distinguished Service Medal (Chung Mu) Korea.

Naval Medical Research and Development Command Highlights

• FDA Licensure Sought for Extended Storage of Several Frozen Blood Products

Blood products for the resuscitation of severely injured combat casualties are essential for emergency medical care. The logistical difficulties of providing fresh blood products in the initial days to weeks of a military conflict are overwhelming. The alternative to fresh blood products is the appropriate storage and utilization of frozen blood products. NMRDC-funded researchers at the Naval Blood Research Laboratory, Boston University School of Medicine, are working with the Blood Bank at the National Naval Medical Center, Bethesda, MD, to prepare data for FDA licensure to extend the storage of several frozen blood products. This includes data to support extended storage of fresh frozen plasma and cryoprecipitate at -80°C for at least 3 years (current FDA regulations allow for the storage of fresh frozen plasma and cryoprecipitate for 1 year at -20°C), storage of frozen single-donor apheresed platelets with 6 percent DMSO at -80°C for 2 years (the FDA has approved DMSO as a cryoprotectant for platelets), and expanded post-thaw storage of deglycerolized red blood cells in a sodium chloride-glucose solution at 4°C for 7 days and in Optisol, ADSOL, or Nutricel solutions at 4°C for 14 days. Another work effort that is part of the above projects is the development of a post-thaw red blood cell wash system which is completely closed to the environment. Also, in 1992, the Naval Blood Research Laboratory will begin to assay solutions made by the Resuscitation Fluid Production System (REFLUPS) and to provide data to support FDA licensure.

• NMRI's Enteric Disease Program Transitions Prototype Campylobacter Vaccine Into Advanced Stages of Development

Campylobacter jejuni is recognized worldwide as a major bacterial cause of enteric disease and is the second most common cause of bacterial diarrhea in the developing world, accounting for an estimated 400 million cases annually. In the United States, campylobacter isolations are more frequent than Salmonella and Shigella isolations combined. Researchers in the Campylobacter Research Program at the Naval Medical Research Institute (NMRI), Bethesda, MD, have developed two classes of oral vaccine candidates. One is a stable, live flagellar mutant which immunizes against wild type organisms without colonizing long enough to

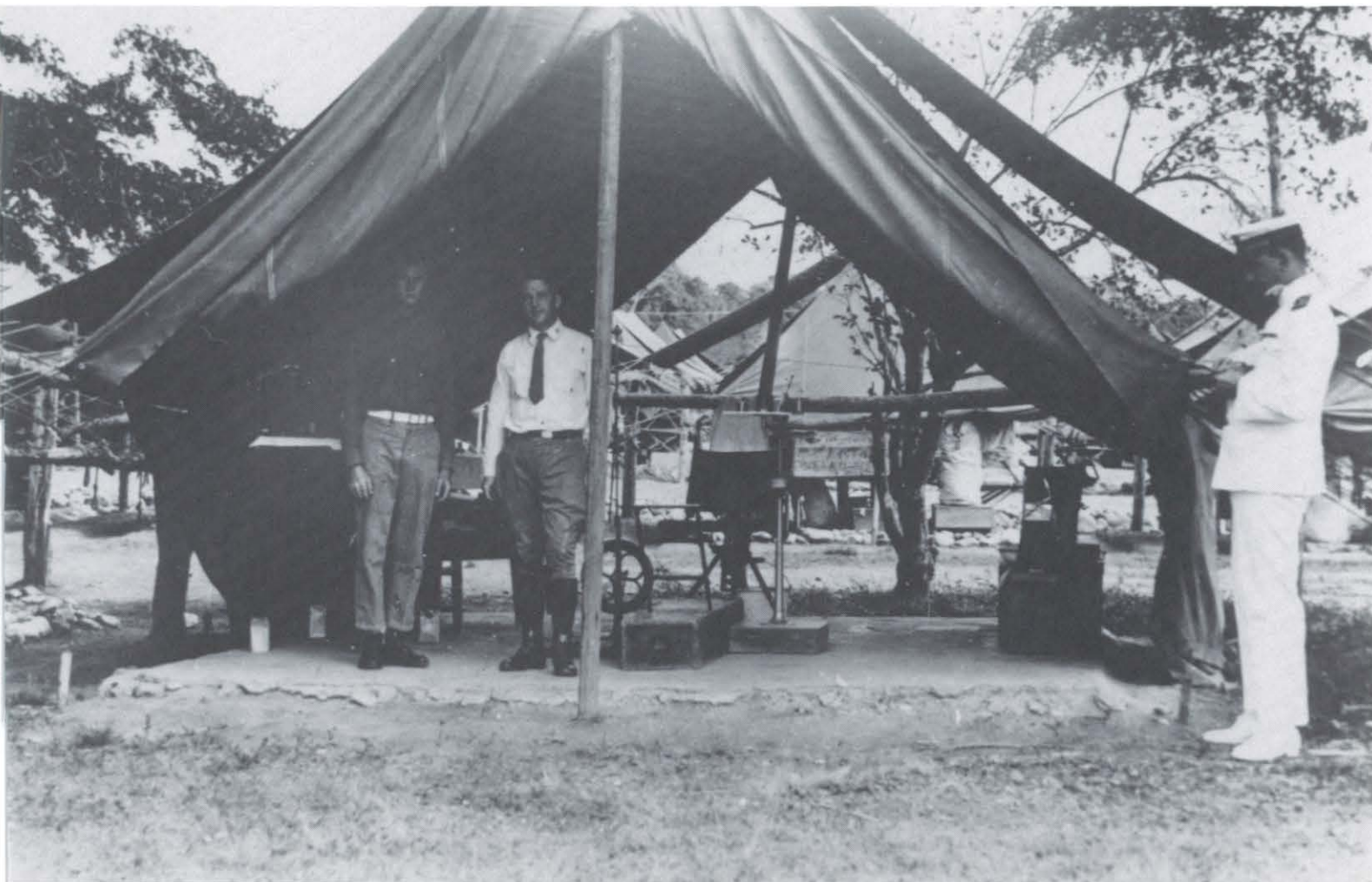
initiate disease. The second, and most advanced, is a killed whole cell preparation with the immunogenicity enhanced by a prototype oral adjuvant. The adjuvant used in this vaccine candidate is also a Navy (ONR) developed product and its utilization in this first generation campylobacter vaccine represents a new concept in enteric vaccine development. In a variety of animal models, the killed whole cell vaccine has no significant side effects, is highly immunogenic and capable of stimulating protective levels of immunity comparable to that achieved following infection with live organisms. This vaccine may be available for phase I and II safety and immunogenicity testing in human volunteers during early FY93.

• Researchers Developing Frequency Agile Laser Eye Protection for Aircrew Personnel

Current laser eye protection protects against one, or several discrete wavelengths of laser radiation. Lasers presently under development will have the capability for either preset or frequency adjustment during operation. These "agile" lasers require a conceptually different type of eye protection. In 1986, a multiservice, multidisciplinary team of experts brought together by the Vision Laboratory of the Naval Air Development Center, Warminster, PA, and funded in part by NMRDC, began investigating various nonlinear optical materials. This group has been working to develop new technologies to ensure that eyes will not be damaged and vision will not be disrupted when aircrew personnel are irradiated by a frequency agile laser. To be effective the new eye protection system must respond across the visible spectrum, activate in less than a nanosecond, remain in the closed state until cessation of radiation, have a minimum unactivated state transmittance of 75 percent, and be able to withstand high peak incident powers. Presently, three technology demonstrators are being fabricated based on liquid suspension and liquid crystal technologies. Recent field tests conclusively demonstrated that the liquid suspension cell functions well in the presence of atmospheric scintillation which can cause significant restructuring of the power profile of the incident laser. Testing is underway to begin transition of the most promising technologies in addition to pursuing five additional technologies.

For additional information on these or other medical R&D projects, contact NMRDC Code 04 at Commercial (301) 295-0255 or Autovon 295-0255.

Navy Medicine 1920



Field dental unit, 1st Brigade, USMC, Mirabalais, Haiti

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